REMARKS

In the Office Action dated December 28, 2006, the Examiner (1) rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0159513 ("Williams") in view of U.S. Patent No. 6,742,187 ("Vogel"); and (2) rejected claims 39, 41-46, and 48-57 under 35 U.S.C. §103(a) as being unpatentable over Williams in view of U.S. Patent No. 6,643,295 ("Nose").

In this Amendment, Applicants make no amendments and add no new claims. Claims 11, 39, 41-46, and 48-57 are pending.

1.   Rejection of claim 11 under § 103(a)

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of Vogel. Applicant respectfully traverses this rejection.

Claim 11 recites:

> A method of scheduling cable modems in a broadband
> communications system, comprising:
>
> receiving bandwidth allocation requests from the cable
> modems;
>
> for each of the bandwidth allocation requests, determining a
> mini-slot size based on a modulation and symbol rate associated
> with a respective bandwidth allocation request;
>
> scheduling transmission on a physical upstream channel
> from cable modems associated with each of the bandwidth
> allocation requests based on a respective mini-slot;
>
> segregating the physical upstream channel into multiple
> virtual upstream channels, wherein each of the multiple virtual
> upstream channels is associated with a different modulation and
> symbol rate;

> grouping the cable modems into a plurality of groups; and
>
> assigning a different one of the multiple virtual upstream
> channels to each of the plurality of groups for upstream
> transmission.

The Examiner admits that <u>Williams</u> fails to disclose a different modulation associated with each of the multiple virtual upstream channels. <u>See</u> Office action at p. 3. The Examiner alleges, however, that <u>Williams</u> discloses "grouping cable modems into a plurality of groups" in figure 1, elements 110 and 112. <u>Id.</u> The Examiner cannot rely on figure 1, elements 110 and 112, however, because at least this figure and its corresponding description are not prior art to the present patent application.

<u>Williams</u> is a published patent application and is considered prior art "as of the earliest effective U.S. filing date of the published application." See M.P.E.P. § 901.03. <u>Williams</u> was filed on April 3, 2002, and claims priority to Provisional Application No. 60/281,934 filed April 6, 2001 ("the '934 application"). <u>Williams</u>, however, is prior art as of April 6, 2001, only for matter disclosed in the '934 application. For matter not disclosed in the '934 application, <u>Williams</u> is prior art as of April 3, 2002. At least Figure 1 and its corresponding written description in <u>Williams</u>, however, do not find support in the '934 application and therefore have a prior art date of April 3, 2002, not April 6, 2001. The present application was filed on October 25, 2001, and claims priority to a provisional application filed August 21, 2001 – before the prior art date for Figure 1 and the corresponding description in <u>Williams</u>. Therefore, at least Figure 1 and the corresponding description of <u>Williams</u> are not prior art to the present application.

Thus, the rejection of claim 11 is improper. Applicant respectfully requests that the

Examiner reconsider and remove the rejection of claim 11 under § 103(a).

2.   Rejection of claims 39, 41-46, and 48-57 under 35 U.S.C. §103(a)

Claims 39, 41-46, and 48-57 stand rejected under 35 U.S.C. §103(a) as being

unpatentable over <u>Williams</u> in view of <u>Nose</u>. Applicant respectfully traverses this rejection.

Claim 39 recites:

> A method, comprising:
>
>> grouping cable modems into a plurality of groups, wherein
> the cable modems are grouped into the plurality of groups based on
> a latency associated with each of the plurality of groups; and
>
>> assigning a different virtual upstream channel to each of the
> plurality of groups, wherein each virtual upstream channel is
> associated with a different modulation, symbol rate or preamble.

The Examiner admits that <u>Williams</u> does not disclose grouping cable modems based on a

latency associated with each of the plurality of groups. The Examiner alleges, however, that

<u>Williams</u> discloses "grouping cable modems into a plurality of groups" in figure 1, elements

110 and 112. <u>See</u> Office action at p. 3. The Examiner cannot rely on figure 1, elements 110

and 112, however, because, as discussed above, at least this figure and the corresponding

description are not prior art to the present patent application.

Thus, the rejection of claim 39 relying on Figure 1 of <u>Williams</u> is improper.

Applicant respectfully requests that the Examiner reconsider and remove the rejection of

claim 39 under § 103(a).

In addition, even if <u>Williams</u> were prior art, the combination of <u>Williams</u> and <u>Nose</u>

does not render claim 39 obvious under § 103(a) for the reasons put forth in the Response

filed November 9, 2006.

Claims 41-45 depend on claim 39 and include all the features of claim 39. The Examiner's rejection of these claims relies on the improper rejection of claim 39. Therefore, the rejections of claims 41-45 are also improper. Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of claims 41-45 under § 103(a).

Claim 46 recites:

> A cable modem termination system (CMTS), comprising:
> means for grouping cable modems into a plurality of groups, wherein the cable modems are grouped into the plurality of groups based on a latency associated with each of the plurality of groups; and
> means for assigning a different virtual upstream channel to each of the plurality of groups, wherein each virtual upstream channel is associated with a different modulation, symbol rate or preamble.

In rejecting claim 46, the Examiner also relies on Figure 1 in <u>Williams</u>. <u>See</u> Office Action at 3. As discussed above, at least Figure 1 and the corresponding description in Williams are not prior art to the present application. Therefore, the rejection of claim 46 is improper. Applicant respectfully requests that the examiner reconsider and withdraw the rejection of claim 46 under § 103(a).

Claims 48-52 depend on claim 46 and include all the features of claim 46. The Examiner's rejection of these claims relies on the improper rejection of claim 39. Therefore, the rejections of claims 48-52 are also improper. Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of claims 41-45 under § 103(a).

Claim 53 recites:

> A method, comprising:
>
> > grouping cable modems into different groups based on
>
> latencies associated with the cable modems; and
>
> > allocating bandwidth request opportunities to each of the
>
> different groups of cable modems based on the different latencies
>
> associated with each of the groups.

In rejecting claim 53, the Examiner also relies on Figure 1 in <u>Williams</u>. <u>See</u> Office Action at 5. As discussed above, at least Figure 1 and the corresponding description in <u>Williams</u> are not prior art to the present application. Therefore, the rejection of claim 53 is improper. Applicant respectfully requests that the examiner reconsider and withdraw the rejection of claim 53 under § 103(a).

Claims 54-56 depend on claim 53 and include all the features of claim 53. The Examiner's rejection of these claims relies on the improper rejection of claim 53. Therefore, the rejections of claims 54-56 are also improper. Applicant respectfully requests that the Examiner reconsider and withdraw the rejections of claims 54-56 under § 103(a).

The rejection of claim 57 under § 103(a) over <u>Williams</u> in view of <u>Nose</u> is improper because the Examiner has not indicated how <u>Nose</u> is being applied to claim 57. <u>Nose</u> is not discussed by the Examiner with respect to claim 57. Applicant respectfully requests that the Examiner indicate how <u>Nose</u> is being applied to reject claim 57 or to withdraw the rejection of claim 57.

In addition, in rejecting claim 57, the Examiner states that <u>Williams</u> discloses "configuring a slower modem to transmit frequent short bursts of data," <u>see</u> Office Action at 4, and relies on <u>Williams</u> at paragraph 41, lines 14-19, which states:

> When modems are configured to transmit at a low data rate, many

modems may share the same timeslot. Modem data rate and
frequency of timeslots may be configured such that modems
transmit frequent short bursts of data.

This scenario described in paragraph 41, lines 14-19, however, does not find support in the

'934 provisional application. Applicant cannot find any reference in the '934 provisional

application to bursts of data. Therefore, this material relied on by the Examiner has a prior art

date of April 3, 2002, which means it is not prior art to the present application. As a result,

the Applicant does not address the merits of the Examiner's arguments.

In view of the foregoing amendments and remarks, Applicant respectfully requests the

Examiner's reconsideration of this application, and the timely allowance of the pending

claims. If any questions remain, the Examiner is invited to contact the undersigned at the

telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is

hereby made. Please charge any shortage in fees due in connection with the filing of this

paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit

any excess fees to such deposit account.

Respectfully submitted,
HARRITY SNYDER, L.L.P.

By: /Kenneth M. Lesch/
Kenneth M. Lesch
Registration No. 44,868

Date: March 28, 2007

11350 Random Hills Road
Suite 600
Fairfax, Virginia 22030
(571) 432-0800

Customer Number: 44987